Form: TH- 02

Virginia Regulatory Town Hall

Proposed Regulation
Agency Background Document

Agency Name:	State Air Pollution Control Board
Regulation Title:	Regulations for Emissions Trading
Primary Action:	9 VAC 5 Chapter 140 (9 VAC 5-140-10 et seq.)
Secondary Action(s):	None
Action Title:	NO_X Emissions Budget Trading Program (Rev. D98)
Date:	October 5, 2000

This information is required pursuant to the Administrative Process Act (§ 9-6.14:9.1 *et seq.* of the *Code of Virginia*), Executive Order Twenty-Five (98), and the *Virginia Register Form, Style and Procedure Manual*. Please refer to these sources for more information and other materials required to be submitted in the regulatory review package.

Summary *

Please provide a brief summary of the proposed new regulation, amendments to an existing regulation, or the regulation being repealed. There is no need to state each provision or amendment or restate the purpose and intent of the regulation.

The regulation establishes a NOx Budget Trading Program as a means of mitigating the interstate transport of ozone and nitrogen oxides including the following provisions: permitting allowance methodology, monitoring, banking, compliance supplement pool, compliance determination and opt-in provisions for sources not covered by the regulation.

Beginning May 31, 2004, electric generating units with a nameplate capacity greater than 25 MWe and non-electric generating units above 250 mmBtu will be subject to the provisions of the regulation. NOx emissions from subject units shall be capped to a specific limited (measured in tons) during the summer months of May 1 through September 31, otherwise know as the control period. The NOx cap shall be determined through a methodology based upon emission rates multiplied by heat input. If a unit does not use all of it's allowances for a specific control period, those extra tons may be banked for future use or sold. If a unit exceeds the capped limit, additional allowances may be purchased or the source may use banked allowances to offset the amount of NOx generated above the capped limit.

Sources found to be out of compliance will be forced to surrender allowances for the next year on a ratio of 3:1, i.e. for every ton over the cap, three tons will be forfeited from the next year's allocation.

Emissions will need to be monitored according to 40 CFR Part 75 of the Code of Federal Regulations for all sources subject to the regulation and for any sources wishing to opt-in to the program.

A compliance supplement pool is provided for sources that generate early reduction credits or demonstrate "undue risk". The allowances from the pool are good for only two years and cannot be banked after that two-year period.

Basis *

Please identify the section number and provide a brief statement relating the content of the statutory authority to the specific regulation proposed. Please state that the Office of the Attorney General has certified that the agency has the statutory authority to promulgate the proposed regulation and that it comports with applicable state and/or federal law.

Section 10.1-1308 of the Virginia Air Pollution Control Law (Title 10.1, Chapter 13 of the Code of Virginia) authorizes the State Air Pollution Control Board to promulgate regulations abating, controlling and prohibiting air pollution in order to protect public health and welfare. Written assurance from the Office of the Attorney General that (i) the State Air Pollution Control Board possesses the statutory authority to promulgate the proposed regulation amendments and that (ii) the proposed regulation amendments comport with the applicable state and/or federal law is available upon request.

Purpose *

Please provide a statement explaining the rationale or justification of the proposed regulation as it relates to the health, safety or welfare of citizens.

The purpose of the regulation is to establish general provisions addressing applicability, permitting, allowance allocation, excess emissions, monitoring, and opt-in provisions to create a Virginia NOx Budget Trading Program as a means of mitigating the interstate transport of ozone and nitrogen oxides in order to protect public health and welfare. The regulation is being proposed to create an enforceable mechanism to assure that collectively, all affected sources will not exceed the total NOx emissions cap established by regulation for the year 2007 ozone season and to provide the regulatory basis for a program under which the creation, trading (buying and selling) and registering of emission credits can occur.

Substance *

Please identify and explain the new substantive provisions, the substantive changes to existing sections, or both where appropriate. Please note that a more detailed discussion is required under the statement providing detail of the regulatory action's changes.

1. The regulation applies to electric generating units (EGUs) with a nameplate capacity greater than 25 MWe and non-electric generating units (non-EGUs) above 250 mmBtu, hereafter referred to as the core source categories. A "unit" is defined as a fossil fuel-fired stationary boiler, combustion turbine, or combined cycle system.

2. Core sources smaller than 25 tons/per/season (tps) are exempt.

3. Smaller sources within the core source categories are not mandated to be included in the program; however, smaller sources within the core source categories are allowed to opt-in to the program.

4. Initial allocations for core source categories is based on heat input multiplied by the core emission rate normalized over the state budget. The core emission rate for EGUs is 0.15 lb/mmBtu; for non-EGUs, 0.17 lb/mmBtu.

5. Subsequent allocations are issued annually beginning April 1 of each year for a specific year, projected 10 years in the future.

6. Baseline heat input (used to calculate allocations) for existing core sources is determined by averaging the two highest years of the immediate preceding 5 years.

7. Baseline allocations for permitted sources is based on the more stringent of the core emission rate or permit limits.

8. Sources may bank any allowances not used during a specific control period.

9. A compliance pool is established which allows for allocations from the pool for early reductions and on a "needs" basis. Allocations from the pool will be distributed to the sources prior to May 31, 2004. Allocations from the pool are valid for two years.

10. Sources that opt-in the program have a separate budget. Baseline determined for opt-ins is based upon the previous year's emissions.

11. All sources participating in the program, including those that chose to opt-in, must meet the monitoring requirements of 40 CFR Part 75 of the Code of Federal Regulations.

Issues *

Please provide a statement identifying the issues associated with the proposed regulatory action. The term "issues" means: 1) the primary advantages and disadvantages to the public of implementing the new or amended provisions; and 2) the primary advantages and disadvantages to the agency or the Commonwealth. If there are no disadvantages to the public or the Commonwealth, please include a sentence to that effect.

1. Public: The primary advantage to the general public is that air quality will improve through a program designed to maximize market forces to reduce pollution in the most cost-effective manner. The cost of compliance is a key issue for the citizens of the Commonwealth since the utility industry is affected by this regulation. If the cost of control is excessive, the additional costs may be passed on to the consumer in the form of rate hikes.

This regulation provides for the trading of NOx allowances to offset the cost of compliance. This approach provides more flexibility for compliance options for the sources affected

while still protecting air quality. A compliance demonstration is required at the end of the ozone season. Sources must demonstrate that they have operated equipment such that the NOx emissions are either equal to or below the specified limit. Tons of NOx may be purchased or sold according to the need of the source owner; NOx credits can also be generated as early reduction credits or the source may choose to bank credits to be used for compliance demonstrations in future years. Sources not subject to the regulation may participate in the program as opt-in sources provided specific conditions are met.

Disadvantages to the regulated sources are in the areas of costs for control and monitoring. Sources will need to monitor emissions with continuous emission monitors (CEMs). If sources do not currently have CEMs they will need to install the monitoring equipment to participate in the program. The total state budget for NOx allowances may not be sufficient to meet the needs if all sources were operating at maximum capacity. Some sources may need to install control equipment. In addition, new sources will need to purchase NOx allowances for many years until they will be included into the allocation system as the regulation does not provide for any set-a sides for new sources.

2. Department: The advantages for the Department are in the area of effective compliance and reduced inspections. The regulation provides procedures for continuous or process parameter monitoring of emissions for determining compliance with the NOx emissions standard. This will result in very accurate data to be used for compliance demonstrations or enforcement actions when necessary. EPA will administer the trading and banking aspects of the regulation thereby avoiding any additional costs that would be associated with that activity.

Disadvantages include the need for the Department to review the compliance demonstrations. More time may be involved if a source chooses to utilize early reduction credits (ERCS), credits from other states or banked credits. Each year a new NOx allocation will need to be computed. The new NOx allocations will need to be incorporated into either the source's Title V permit at the appropriate time or into a state operating permit.

Localities Particularly Affected *

Please provide the identity of any localities particularly affected by the proposed regulation.

There is no locality which will bear any identified disproportionate material air quality impact due to the proposed regulation which would not be experienced by other localities.

Public Participation *

Please indicate the nature of the comments the Department is soliciting pursuant to this notice.

The Department is seeking comment on (i) the proposed regulation, (ii) the costs and benefits of the proposal and (iii) the additional issues identified below.

Additional Issues for Public Comment *

Please indicate the nature of any additional issues on which the Department is soliciting comments pursuant to this notice.

1. **CHANGES TO AUTHORIZING LEGISLATION**

The authority under the state code for emissions trading regulations is found in § 10.1-1322.3. In Chapter 580, 2001 Acts of the Assembly, the provisions of § 10.1-1322.3 were amended in such a way that will necessitate changes to the proposed regulation subject to this comment period. The text of § 10.1-1322.3 with the revisions underlined is shown below

> **§ 10.1-1322.3. Emissions trading programs; emissions credits; Board to promulgate regulations.** --- In accordance with § 10.1-1308, the Board may promulgate regulations to provide for emissions trading programs to achieve and maintain the National Ambient Air Quality Standards established by the United States Environmental Protection Agency, under the federal Clean Air Act. The regulations shall create an air emissions banking and trading program for the Commonwealth, to the extent not prohibited by federal law, that results in net air emission reductions, creates an economic incentive for reducing air emissions, and allows for continued economic growth through a program of banking and trading credits or allowances. The regulations applicable to the electric power industry shall foster competition in the electric power industry, encourage construction of clean, new generating facilities, provide new source set-asides of five percent for the first five plan years and two percent per year thereafter, and provide an initial allocation period of five years. In promulgating such regulations the Board shall consider, but not be limited to, the inclusion of provisions concerning (i) the definition and use of emissions reduction credits or allowances from mobile and stationary sources, (ii) the role of offsets in emissions trading, (iii) interstate or regional emissions trading, (iv) the mechanisms needed to facilitate emissions trading and banking, and (v) the role of emissions allocations in emissions trading. No regulations shall prohibit the direct trading of air emissions credits or allowances between private industries, provided such trades do not adversely impact air quality in Virginia.

The proposed regulation does not provide a set-aside for new electric generating units (EGU) or new non-electric generating units (non-EGU). The proposed regulation provides for an initial allocation period of ten years. The new legislation provides a five percent NO_X set-aside for new EGU sources for the first five years of the program. That is, five percent of the allocations from the EGU budget would be kept in reserve for new electric generating sources wanting to locate in Virginia. The set-aside would decrease to two percent for every year thereafter. In addition, the new legislation requires that the initial allocation period be five years. Therefore, the proposed regulation will need to be amended to accommodate the requirements of the new legislation.

Any changes to the regulation to comply with the new legislation will be made following the public comment period and reflected in the final version. This approach to making the changes is provided for in Chapter 580. In general, the

Department is seeking comment regarding how to redraft the proposed regulation to meet the requirements of the new legislation. The statutory changes mentioned above are required by law and cannot be changed; therefore, the Department is not accepting comment pertaining to the length of the allocation period or the size of a set-aside for new electric generating facilities. However, there are specific issues relative to the changes required by the new legislation on which the Department is seeking comment. These are cited below:

a. The proposal has the initial allocation period of ten years. The legislation mandates a five-year initial allocation period for EGU sources only. This creates a two-tier allocation system; five years for EGUs, ten years for non-EGUs. Should the Board strive to achieve a simplified regulatory program by having all sources, both EGU and non-EGU, subject to the same allocation timeframes or should different regulatory allocation timeframes be crafted for the two sectors?

b. Should a set-aside be created for non-EGU sources? If so, should it also be five percent for the first five years, two percent for every year thereafter as specified in the legislation for EGUs, or something different?

c. Should the set-aside mandated by legislation be taken from the entire state budget or only from the EGU sector budget?

d. How should the set-aside be distributed: on a first come, first served basis; distributed equally to all requesting a portion of the set-aside; auction; or some other method?

e. How should the term "new generating facilities" referenced in the legislation be defined, i.e. who is eligible for the set-aside? Is the set-aside available to all sources that didn't receive an initial allocation? Is the set-aside only for sources that receive a first-time permit in that calendar year? Should the set-aside be made available only when a source actually begins to operate?

f. Should subsequent allocations be computed annually or should the time-frame be greater? If greater, how much greater and why?

2. **EPA PRELIMINARY COMMENTS ON PROPOSED STATE REGULATION AND FEDERAL COURT DECISION ON EPA EMISSION BUDGETS**

On December 12, 2000, the Department submitted the proposed regulation to the Regional Office of EPA for preliminary review. By letter of March 9, 2001 (copy available upon request or via the DEQ web page), EPA, Region III, provided its comments on the proposal. EPA provided both (i) comments that identified certain changes that must be made to gain approval of the regulation by EPA and (ii) comments suggesting changes to improve the quality of the

regulation. The mandatory changes addressed the value of the emission trading budget for EGUs and the compliance supplement pool, both of which are larger in the Virginia regulation then in the EPA regulation (40 CFR 51.121). The other comments suggested changes to make the Virginia regulation (based on 40 CFR Part 96) consistent with the version of the federal regulation (40 CFR Part 97) that is to be used if EPA should impose a federal implementation plan on the Commonwealth.

On June 8, 2001, the United States Court of Appeals for the District of Columbia remanded the growth factors that EPA used for the EGU budgets in 40 CFR 51.121 for reconsideration. This leaves open the possibility that the budgets may be revised by EPA.

The following is a brief summary of the method used to set the initial allocation of NOx emission allowances to both the EGU and non-EGU source categories in the Virginia proposed regulation, along with an explanation of why Virginia chose to differ from the EPA method. The sum of the initial allocations for a particular source category (EGU and non-EGU) is used to form the overall emissions budget for each category.

EGU UNITS

First, both the EPA SIP Call rule (40 CFR Part 96) and the Section 126 rule (40 CFR Part 97) methodologies for allocating NO_X allowances were reviewed to determine which is more appropriate. The major difference between these two methods is the period used to establish baseline utilization level (expressed as heat input in millions of BTUs per ozone season). The SIP Call method uses the period of 1995 to 1996 to determine the utilization baseline, and looks at the total utilization of all affected units to set the baseline year. In contrast, the Section 126 rule considers a longer time period to set the utilization baseline (1995 to 1998). In addition, this method uses unit-specific utilization data to set unit-specific baseline levels. This is done by using the average of the two highest heat input values during the five-year period for each unit to set the utilization baseline for that unit.

Based on this evaluation of EPA methods, it was determined that the Section 126 method provided a more representative estimate of baseline unit utilization in Virginia. Therefore, this method was selected for allocating initial NO_X allowances in the proposed regulation. Once the baseline utilization levels were determined, the budget allocation was determined by multiplying the baseline level by an appropriate growth factor and then by the controlled emission rate of 0.15 lbs. of NO_X per million BTUs. However, two changes from the EPA method were included

in the Virginia allocation method due to problems and errors encountered in the EPA data:

Heat Input Errors & Omissions: In reviewing the EPA heat input data used to establish baseline utilization levels, Virginia and the affected sources identified numerous data errors and omissions that have been corrected in the state allocation process.

Growth Factor Application: In the Section 126 rule, EPA used the baseline utilization determination method described above. This produced a different (and higher) overall baseline utilization estimate for Virginia. However, EPA did not modify its utilization projections for the 2007 control year and the resulting budget allocation. This action by EPA effectively reduced the original 32% growth estimate for Virginia (developed using the Integrated Planning Model) to less than 5%. The Commonwealth has corrected this miscalculation in the EPA data by applying the full 32% growth estimate to the EGU category in the state trading regulation.

NON-EGU UNITS

The same basic methodology used for allocating NO_X allowances to the EGU units was used to allocate allowances to the non-EGU units that are subject to the proposed regulation, with the following exceptions.

Heat Input Data Availability: In cases where unit-specific heat input data was available, this data was used in making allowance allocations to affected non-EGU units. However, where heat input data was not readily available, ozone season NO_X emissions were used in lieu of heat input to determine utilization baselines and allocate the allowances. The baseline utilization value was then multiplied by industry/unit specific growth factors to develop the 2007 base (pre-control) emissions.

Application of Controls: The applicable control requirement for non-EGU combustion units in the SIP Call is a 60% NO_X emission reduction from uncontrolled levels. Therefore it was necessary to determine the control status of each unit during the baseline period. If the unit was uncontrolled during the baseline period, the 60% reduction requirement was applied to the 2007 baseline emissions to determine the unit's budget allowance allocation. In cases where controls were in place during the baseline period, these controls and reduction levels were identified, and only the difference between the existing control rate and the 60% SIP Call rate was applied to the 2007 base emissions to determine the unit's budget allowance allocation.

It should be noted that some of the units on EPA's original list of units to receive initial allocations were omitted from the list in the Virginia proposed regulation for the following reasons:

- Several units on the EPA list had actual design capacities that are less than the size cutoff of 250 million BTUs per hour or greater for units to be subject to the SIP Call control requirements.

- Several units on the EPA list did not meet the definition of a “fossil fuel-fired” unit in that over 50% of the fuel combusted in these units during the baseline period (95-98) was not a fossil fuel.

The Department is seeking comment on how to redraft the proposed regulation to address the EPA comments in combination with the court decision. In addition, there are specific issues relative to the changes required by the new legislation on which the Department is seeking comment. These are cited below:

a. As explained, the proposed regulation identifies all sources and units within those sources that receive an initial allocation and provides a NOx allocation for each unit. If EPA modifies the emissions budget in response to the court decision after the effective date of the final Virginia regulation, any changes to bring the individual unit allocations in the regulation in line with the new EPA emissions budget would require the Department to initiate a new regulatory action under the Administrative Process Act. There are several alternatives the Board could use to address this potential problem:

- Leave the proposal with units and allocations listed by regulation. If EPA makes changes to the state emission budgets the regulation would be changed through the normal regulatory adoption process.

- Modify the proposal to list the sources and units only and incorporate the EPA budget by reference. The allocation process would be accomplished outside of the regulatory process; that is, the individual allocations would not be identified in the regulation. This would result in accepting the EPA emissions budget, whether or not it is modified due to the court decision. It would also mean that any discrepancies previously noted by the department may not be addressed in the new EPA calculations.

b. Should the Board accept the EPA comment which requires the EGU and non-EGU budgets to be lowered to meet the EPA budgets listed in the federal regulations? If so, how should the budgets be reduced? (This comment impacts whether the SIP can be approved by EPA).

c. The EPA also made comments of a general nature intended to improve the regulation but would not impact the approval of the SIP submittal. Should the Board accept any of these comments? If so, which ones?

3. **DEPARTMENT PREFERENCES ON ISSUES**

At this time the Department is inclined to recommend to the Board that the proposed regulation be amended as cited below to address the above issues. The Department believes that this will be the best approach to ensure that the final regulation will gain EPA approval and facilitate the participation by Virginia sources in the national EPA emissions trading program. The Department will reconsider its position in light of the comments received in response to this notice.

a. The state regulation should incorporate the EPA emissions budget and compliance supplement pool by reference, thus avoiding the necessity of revising the regulation should EPA revise its emissions budget or compliance supplement pool.

b. In order to accommodate the changes described in paragraph a above, the state regulation should not include the initial allocations for the individual units. The initial and subsequent allocations would be accomplished outside of the regulatory process.

c. The state regulation (which is based on 40 CFR Part 96) should incorporate the changes recommended by EPA to make it consistent with 40 CFR Part 97.

d. The methodology in 40 CFR Part 97, amended to accommodate the new state legislation (Chapter 580), should be used to distribute the new source set-aside.

e. The regulation should include a new source set-aside for non-EGUs consistent with that required by state law for EGUs. Each set aside should come from the emissions budget for that source category.

f. The state regulation should provide for a single system for the initial allocation period and distribution of the new source set asides for both EGUs and non-EGUs.

Schedule for Final Adoption *

Please indicate the schedule the Department will pursue to facilitate final adoption and meet federal deadlines for submittal of the regulation as a revision to the state implementation plan.

Executive Order Number Twenty-Five (98) prescribes the procedures which must be followed by state agencies in the development and review of regulations and associated support documents. Included in the executive order are provisions which limit the time by which regulatory agencies must complete the development of proposed and final regulations.

A final regulation document package must be delivered to the Registrar of Regulations for publication in the Virginia Register within 120 days of the close of the 60-day public comment period. During this 120-day period the agency must prepare responses to any public comments and gain the approval of the final regulation by the Attorney General's Office and the Board. For this regulatory action, the public comment period ends on September 14, 2001; therefore, the due date for delivering the final to the Registrar is January 14, 2002.

Two events took place after approval of the proposed regulation by the Board on November 8, 2000 which will require that the Board consider additional issues during the adoption of the final that are outside of the normal process.

First, the authority under the state code for this regulation was amended. In Chapter 580, 2001 Acts of the Assembly, the provisions of § 10.1-1322.3 were amended in such a way that will necessitate changes to the proposed regulation subject to this comment period. Chapter 580 allows the Board to address any changes necessary to comply with the legislation after the public comment period (see below).

> **That the provision of this act shall not be construed to require the State Air Pollution Control Board to reinitiate the regulatory process for the development of the regulations required by this act and that any changes made to comply with the provisions of this act may be made following the public comment period on the proposed regulations approved for public comment by the State Air Pollution Control Board on November 8, 2000.**

Second, on June 8, 2001, the United States Court of Appeals for the District of Columbia remanded the growth factors that EPA used for the EGU emissions budgets in 40 CFR 51.121 for reconsideration. This leaves open the possibility that the budgets may be revised by EPA.

Additional information on these issues may be found in this document under the section titled "Additional Issues for Public Comment" preceding this section.

Because of the time necessary to address these additional issues, the Department may request additional time of up to 3 months to meet the requirement for delivering the final regulation to the Registrar of Regulations; thus extending the date for delivering the final to the Registrar to April 12, 2001.

By notice of December 26, 2000 (65 FR 81366), EPA issued a finding that the Commonwealth, among others, failed to submit the SIP revision required by 40 CFR 51.121 by the required due date of October 30, 2000. The notice is effective January

25, 2001. If the Commonwealth does not make the required submittal, or the submittal is not found by EPA to be administratively complete, within 18 months of the effective date (July 25, 2002), EPA will impose certain sanctions. Regardless of any time needed to address these additional issues, the Department will present the draft final regulation to the Board in time to submit the regulation and receive the completeness determination by EPA prior to July 25, 2002.

Impact

Please identify the anticipated fiscal impacts and at a minimum include: (a) the projected cost to the state to implement and enforce the proposed regulation, including (i) fund source / fund detail, (ii) budget activity with a cross-reference to program and subprogram, and (iii) a delineation of one-time versus on-going expenditures; (b) the projected cost of the regulation on localities; (c) a description of the individuals, businesses or other entities that are likely to be affected by the regulation; (d) the agency's best estimate of the number of such entities that will be affected; and(e) the projected cost of the regulation for affected individuals, businesses, or other entities. Include a description of the beneficial impact the regulation is designed to produce.

1. Entities Affected

Approximately 80 large NOx emissions units, both electric generating units and non-electric generating units, will be affected by the proposal. In addition, one owner may control several NOx emissions units; therefore, even though approximately 80 units are affected, the number of affected sources (owners) is significantly less.

2. Fiscal Impact

The EPA has estimated that the total cost for reductions to achieve the NOx SIP Call (which includes the 22 state region east of the Mississippi) to be approximately 1.7 billion dollars per year. EPA has also estimated the total tons of NOx reductions for that geographic area to be approximately 1.2 million tons. This results in a cost per ton of NOx reduced of approximately $1,500. EPA has stated that NOx emission reductions costing as much as $2000 per ton should be considered cost-effective.

Under the NOx SIP Call, the total NOx reductions from both electric generating (EGU) and non-electric generating (non-EGU) units for Virginia is projected by EPA to be approximately 45,000 tons. Based on a projected cost of $1,500 per ton, the cost to Virginia sources to meet the NOx SIP Call will be approximately $67 million per year.

Source specific situations, i.e. age of equipment, type and availability of control equipment, available space to install equipment, etc. will vary from source to source. Therefore, the estimate of cost per ton may very wildly from source to source and some sources may choose to take advantage of the option to purchase NOx allowances.

The trading mechanism incorporated in the regulation allows sources to purchase NOx allowances until such time as they choose to retrofit or replace or shut down older equipment that may not operate as efficiently as new equipment. The widespread

success of emission trading has been demonstrated with the implementation of Title IV of the Clean Air Act, commonly referred to as the acid rain program. This program has been very successful in reducing SO_2 pollution from utility plants and this regulation is modeled after that program.

b. Costs to Localities

The projected cost of the regulation on localities is not expected to be beyond that of other affected entities and are addressed in paragraph 2a above.

c. Costs to Agency

The Department will need to compute new allocations every year, conduct inspections of the sources affected by the regulation and incorporate this information into Title V or state operating permits. This is an ongoing activity; however, more specific and accurate information will be obtained during the inspections due to the fact that the equipment will be outfitted with CEMs. The Department will need to review compliance demonstrations from affected sources and "opt-ins". EPA will administer the trading and banking elements of the regulation, therefore, there will be no additional costs affiliated with that aspect of the regulation.

It is not expected that the regulation will result in any cost to the Department beyond that currently in the budget. The sources of Department funds to carry out this regulation are the general fund and the federal trust (grant money provided by the U.S. Environmental Protection Agency under Section 105 of the federal Clean Air Act or permit fees charged to affected entities under the permit program). The activities are budgeted under the following program (code)/subprogram (code): (i) Environmental and Resource Management (5120000)/Air Quality Stationary Source Permitting (5122000) and Air Quality Stationary Source Compliance Inspection (5122100) and (ii) Environmental Research and Planning (5130000)/Air Quality Research and Planning (5130700). The costs are expected to be ongoing.

d. Benefits

By achieving the projected NOx reductions, the Commonwealth will meet its requirements under the contingency measures of the Maintenance Plan for the Richmond area, thus ensuring the maintenance of air quality in central Virginia and throughout the state. The projected emissions reductions from sources in Virginia are 45,000 tons per year. These reductions will improve air quality by reducing NOx, a precursor for the formation of ozone, in Virginia and upwind states, thus meeting the goals of the federal NOx SIP Call regulation.

e. Small Business Impact

The impact upon facilities that meet the definition of small business provided in § 9-199 of the Code of Virginia is addressed in paragraph 2a above.

Legal Requirements

Please identify the state and/or federal source of the legal requirements that necessitate promulgation of the contemplated regulation. The discussion of these requirements should include a description of their scope and the extent to which the requirements are mandatory or discretionary. Full citations for the legal requirements and web site addresses, if available, for locating the text of the cited legal provisions should be provided.

Federal Requirements

Federal Clean Air Act (CAA):
http://www.epa.gov/ttn/oarpg/gener.html
Code of Federal Regulations (CFR):
http://www.access.gpo.gov/nara/cfr/cfr-retrieve.html
Federal Register (FR):
http://www.gpo.gov/su_docs/aces/aces140.html

Sections 109 (a) and (b) of the Clean Air Act require EPA to prescribe national air quality standards (NAAQS) for each air pollutant for which air quality criteria were issued before the enactment of the 1970 Clean Air Act. The standards fall into two categories, primary standards to protect public health and secondary standards to protect public welfare. Section 109 (c) requires EPA to prescribe such standards simultaneously with the issuance of new air quality criteria for any additional air pollutant.

The primary and secondary air quality criteria are authorized for promulgation under Section108. The criteria for each pollutant shall include, to the extent practicable, information on the following:

(1) variables which may adversely affect the impact of an air pollutant on public health or welfare;

(2) pollutants which may interact with other pollutants to produce an adverse effect on public health or welfare; and

(3) any known or anticipated adverse effects on public health or welfare.

Section 302 (h) defines effects on public welfare as including, but not limited to, effects on soils, water, vegetation, man-made materials, animals, weather, visibility. Also included are damage to and deterioration of property, hazards to transportation, and adverse effects on economic values, personal comfort, and well-being.

Section 110(a) of the Clean Air Act mandates that each state adopt and submit to EPA a plan which provides for the implementation, maintenance, and enforcement of each primary and secondary air quality standard within each air quality control region in the state. The state implementation plan shall be adopted only after reasonable public

notice is given and public hearings are held. The plan shall include provisions to accomplish, among other tasks, the following:

> (1) establish enforceable emission limitations and other control measures as necessary to comply with the provisions of the Act, including economic incentives such as fees, marketable permits, and auctions of emissions rights;
>
> (2) establish a program for the enforcement of the emission limitations and schedules for compliance;
>
> (3) prohibit emissions which would contribute to nonattainment of the standards or interference with maintenance of the standards by any state;
>
> (4) insure compliance with the requirements of §§ 126 and 115 of the Act, which relate to interstate and international pollution abatement;
>
> (5) provide for the revision of the plan as necessary to incorporate a revision to federal law or regulation; and
>
> (6) provide for the revision of the plan as necessary to remedy any findings of inadequacy by EPA.

Section 110(k)(5) provides the EPA administrator with the authority to issue “SIP calls”. If the administrator finds that the applicable implementation plan for any area is substantially inadequate to attain or maintain the relevant national ambient air quality standard, the administrator shall require the state to revise the plan as necessary to correct such inadequacies. The administrator shall notify the state of the inadequacies and may establish reasonable deadlines (not to exceed 18 months after the date of such notice) for the submission of such plan revisions. Any such finding shall subject the state to the requirements of the Act to which the state was subject when it developed and submitted the plan for which the finding was made, except that the administrator may adjust any applicable dates as appropriate (except for attainment dates, unless these have elapsed).

40 CFR Part 51 sets out requirements for the preparation, adoption, and submittal of state implementation plans. These requirements mandate that any such plan shall include several provisions, as summarized below.

Subpart F (Procedural Requirements) specifies definitions of key terms, stipulations and format for plan submission, requirements for public hearings, and conditions for plan revisions and federal approval.

Subpart G (Control Strategy) specifies the description of emissions reductions estimates sufficient to attain and maintain the standards, the description of control measures and schedules for implementation, time periods for demonstrations of the control strategy's adequacy, an emissions inventory, an air quality data summary, data availability, special requirements for lead emissions, stack height provisions, and intermittent control systems.

Section 51.121 requires specific jurisdictions to revise their State Implementation Plans to prohibit sources and other activities from emitting nitrogen oxides (NOx) in amounts that will contribute significantly to nonattainment in one or more other states with respect to the 1-hour ozone national ambient air quality standard (NAAQS). Paragraph (a)(1) stipulates that the EPA Administrator has made a finding that 22 jurisdictions have substantially inadequate State Implementation Plans (SIPs) to comply with requirements of the Clean Air Act that address interstate transport of nitrogen oxides in amounts that will contribute significantly to nonattainment in one or more other States with respect to the 1-hour ozone national ambient air quality standards.

Paragraph (b) requires that the SIP revisions include control measures to limit the amount of NOx so that the jurisdiction's budget is not exceeded. The control measures must be implemented no later that May 1, 2003, paragraph (b)(1)(ii). An interstate trading program may be included in the SIP according to paragraph (b)(2), provided the revision contains: (i) a prohibition of NOx emissions in excess of the jurisdiction's budget, (ii) emissions reductions used to demonstrate compliance occur during the ozone season, and (iii) reductions occurring prior to the year 2003 may be used by a source to demonstrate compliance with the SIP for the 2003-2004 ozone season provided specific criteria are met or if not needed to demonstrate compliance, may be banked and used to demonstrate compliance with the SIP in a subsequent ozone season, paragraph (b)(2)(i) and (ii)(A) -(E). All implementation dates referenced above were delayed by one year by the United States Court of Appeals for the District of Columbia Circuit.

The states subject to §51.121 are specifically identified, paragraph (c). The states must submit a SIP revision to imposes enforceable mechanisms to assure that, collectively, all sources identified in the state's budget will not exceed the NOx emissions projected for the year 2007 ozone season, paragraph (e). The section also identifies each state's NOx budget, expressed in tons, paragraph (e)(2).

Each SIP revision must identify control measures for sources subject to the state budget, paragraph (f), and must identify procedures for monitoring compliance with the control measures, procedures for handling violations and a designation of the agency responsible for implementation and enforcement of the SIP revision, paragraph (f) (1) (i)-(iii). The SIP revision must also address the following: demonstrate that the control measures contained in the SIP are adequate to provide for compliance with the 2007 NOx budget, paragraph (g); meet requirements for data availability, paragraph (h); provide for monitoring the status of compliance, paragraph (i); show that the State has legal authority to carry out all provisions of the SIP and provide copies of such documents with the submittal to EPA, paragraphs (j) and (k); demonstrate the authority to assign legal authority to local agencies according to specific criteria, paragraph (l); and demonstrate adequate resources are available to implement the SIP, paragraph (m).

The section also provides EPA authority to implement sanctions according to section 179(a)(1)-(4) of the Clean Air Act for failure to submit a required SIP revision, paragraph (n). If the state chooses, it may adopt 40 CFR Part 96 (the model NOx budget trading

program for SIPs). The State's SIP revision will be automatically approved if this option is chosen, paragraph (p).

Subpart I (Review of New Sources and Modifications) specifies legally enforceable procedures, public availability of information on sources, identification of responsible agency, and administrative procedures.

Subpart L (Legal Authority) specifies identification of legal authority to implement plans and assignment of legal authority to local agencies.

Section 51.230 of Subpart L specifies that each state implementation plan must show that the state has the legal authority to carry out the plan, including the authority to perform the following actions:

> (1) adopt emission standards and limitations and any other measures necessary for the attainment and maintenance of the national ambient air quality standards; and
>
> (2) enforce applicable laws, regulations, and standards, and seek injunctive relief.

Section 51.231 of Subpart L requires the identification of legal authority as follows:

> (1) the provisions of law or regulation which the state determines provide the authorities required under § 51.231 must be specifically identified, and copies of such laws or regulations must be submitted with the plan; and
>
> (2) the plan must show that the legal authorities specified in Subpart L are available to the state at the time of submission of the plan.

State Requirements

Code of Virginia:
http://leg1.state.va.us/000/cod/codec.htm
Virginia Administrative Code (VAC):
http://leg1.state.va.us/000/reg/toc.htm

Section 10.1-1322.3 of the Code of Virginia indicates that the Board may promulgate regulations to provide for an emissions trading program to achieve and maintain the NAAQS. The banking and trading program shall result in net air emission reductions, create economic incentive for reducing air emissions and allow for economic growth. In developing the regulations, the Board shall consider (i) the definition and use of emissions reduction credits form mobile and stationary sources, (ii) offsets, (iii) interstate or regional trading, (iv) mechanisms needed to facilitate trading and banking, and (v) emissions allocations. However, no regulation shall prohibit the direct trading of credits or allowances between private industries provided such trades do not adversely impact air quality in Virginia.

Comparison with Federal Requirements

Please describe the provisions of the proposed regulation which are more restrictive than applicable federal requirements together with the reason why the more restrictive provisions are needed.

The proposed Virginia regulation (9 VAC 5 Chapter 40) is derived from the EPA model emissions budget trading rule (40 CFR Part 96) but is substantively different in some respects as noted below. Some of these substantive changes make the Virginia regulation more restrictive (*) and some make it less restrictive (†), while others simply make it different. Regulatory citations are provided to show where these changes are located in the proposed regulation.

Compliance Date [various locations throughout]

The compliance date in the EPA rule is May 1, 2003. It should be noted that federal court action has delayed that date to May 31, 2004.

The compliance date in the Virginia regulation is May 31, 2004. Other dates which are linked to the compliance date have been moved forward one year.

25 Tons per Control Period Exemption Level [9 VAC 5-140-40 B] †

In the EPA rule, a unit may be exempt from the control requirements if the unit's potential NOx mass emissions are 25 tons or less for the control period and certain conditions are met, one of which being that the unit burn only natural gas or fuel oil.

The restriction on the use of natural gas or fuel oil has been removed in the Virginia regulation.

State NOx Emissions Trading Budget [9 VAC 5-140-920 and 9 VAC 5-140-930] †

In the EPA rule, the NOx emissions budget for EGUs is 17,091 tons per control period.

The budget under Virginia's regulation is 21,614 tons per control period.

In the EPA rule, the NOx emissions budget for non-EGUs is 4,104 tons per control period.

The budget under Virginia's regulation is 2,684 tons per control period.

NOx Allowance Allocation Method for Electrical Generating Units (EGUs) [9 VAC 5-140-410 and 9 VAC 5-140-420]

In the EPA rule, the initial allocation of allowances will last for three years and is determined by using the average of the two highest heat inputs (in mmBtu) for years 1995, 1996, and 1997 multiplied by the emission rate. Subsequent allocations will be calculated annually for a single year, projected three years in the future. The highest heat input in the year immediately preceding the calculating year will be multiplied by the emission rate.

In the Virginia regulation, the initial allocation of allowances will last for 10 years and is identified in the regulation. Subsequent allocations will be calculated annually for a single year, projected ten years in the future. The average of the two highest heat inputs (in mmBtu) of the immediate five years preceding the calculating year will be multiplied by the emission rate.

NOx Allowance Allocation Method for Non-Electric Generating Units (Non-EGUs) [9 VAC 5-140-410 and 9 VAC 5-140-420]

In the EPA rule, the initial allocation of allowances lasts for three years and is determined by using the highest heat input (in mmBtu) for 1995, multiplied by the emission rate. Subsequent allocations will be calculated annually for a single year, projected three years in the future. The highest heat input in the year immediately preceding the calculating year will be multiplied by the emission rate.

In the Virginia regulation the initial allocation of allowances lasts for 10 years and is identified in the regulation. Subsequent allocations will be calculated annually for a single year, projected ten years in the future. The average of the two highest heat inputs (in mmBtu) of the immediate five years preceding the calculating year will be multiplied by the emission rate.

NOx Allowance Set-a-Sides [9 VAC 5-140-410 and 9 VAC 5-140-420]

The EPA rule provides for 5 percent of the state NOx emissions trading budget to be set-a side for use by new units in the first three years, dropping to 2 percent in subsequent years.

The Virginia regulation distributes all of the NOx emissions trading budget to existing units. New sources will need to purchases allowances from the market for ten years before they become eligible for an allocation.

NOx Allowance Compliance Supplement Pool [9 VAC 5-140-430]

The EPA rule provides a compliance supplement pool of NOx allowances to be distributed to sources that create early reduction credits. The allowances in the pool are good for two years.

The Virginia regulation provides for a compliance supplement pool of NOx allowances to be distributed first to sources that create early reduction credits

during the 2002 and 2003 control periods, then to sources that demonstrate a need provided specific criteria are met. A source may request that allowances be reserved in anticipation of credits the source intends to generate during the 2002 and 2003 control periods and the state may reserve up to 80% of the pool for this purpose. The allowances in the pool are good for two control periods (2004 and 2005).

Early Reduction Credit Allocations [9 VAC 5-140-430 C 4 a and E 4 a] †

The EPA rule provides that early reduction credits are to be allocated based on emission reductions below a NOx emission rate of 0.25 lb/mmBtu.

The Virginia regulation provides that the early reduction credits are to be based on an emission rate of 0.35 lb/mmBtu.

NOx Allowance Compliance Supplement Pool Credit Budget [9 VAC 5-140-910] †

In the EPA rule, the NOx emissions credit limit is 5,504 tons per control period.

The credit limit under Virginia's regulation is 6,990 tons per control period.

NOx Allowance Allocations for Sources under a Permit [9 VAC 5-140-420 B 1 and C 1] *

The EPA rule provides that NOx allowance allocations are to be based on heat input multiplied by the core emission rate (0.15 lb/mmBtu for EGUs; 0.17 lb/mmBtu for non-EGUs).

The Virginia regulation provides that NOx allowance allocations are to be based on heat input multiplied by the more restrictive of the core emission rate or the permit limit.

Need

Please provide an explanation of the need for the proposed regulation and potential consequences that may result in the absence of the regulation. Also set forth the specific reasons the agency has determined that the proposed regulatory action would be essential to protect the health, safety or welfare of citizens or would be essential for the efficient and economical performance of an important governmental function. Include a discussion of the problems the regulation's provisions are intended to solve.

One of the primary goals of the federal Clean Air Act (Act) is the attainment and maintenance of the National Ambient Air Quality Standards (NAAQS) and the prevention of significant deterioration (PSD) of air quality in areas cleaner than the NAAQS.

The Act gives the U.S. Environmental Protection Agency (EPA) the authority to establish the NAAQS, which are designed to protect the health of the general public with an adequate margin of safety. The NAAQS establish the maximum limits of pollutants that are permitted in the ambient air. The Act requires that each state submit a plan (called a State Implementation Plan or SIP), including any laws and regulations necessary to enforce the plan, showing how the air pollution concentrations will be reduced to levels at or below these standards (i.e., attainment). Once the pollution levels are within the standards, the plan must also demonstrate how the state will maintain the air pollution concentrations at reduced levels (i.e., maintenance).

In 1979, EPA established a NAAQS for ozone of 0.12 parts per million (ppm). This standard was based on a 1-hour averaging period and is commonly called the 1-hour standard. When concentrations of ozone in the ambient air exceed the federal standard the area is considered to be out of compliance and is designated as "nonattainment." Numerous counties and cities within the Commonwealth have at one time been identified as ozone nonattainment areas according to the Act. Currently, only the Northern Virginia area is a nonattainment area for the 1-hour standard.

The Act has a process for evaluating the air quality in each region and identifying and classifying each nonattainment area according to the severity of its air pollution problem. There are five nonattainment area classifications called marginal, moderate, serious, severe and extreme. Marginal areas are subject to the least stringent requirements and each subsequent classification (or class) is subject to successively more stringent control measures. Areas in a higher classification of nonattainment must meet the mandates of the lower classifications plus the more stringent requirements of its own class. If a particular area fails to attain the federal standard by the legislatively mandated attainment date, EPA is required to reassign it to the next higher classification level (denoting a worse air quality problem), thus subjecting the area to more stringent air pollution control requirements. The Northern Virginia Ozone Nonattainment Area is classified as serious and therefore has to meet the requirements for the marginal, moderate, and serious classes.

The Act contains comprehensive air quality planning requirements for areas that do not attain the federal air quality standard for ozone (that is, nonattainment areas). Once the nonattainment areas were defined, each state was then obligated to submit a SIP revision or plan demonstrating how it will attain the air quality standard in each nonattainment area. Failure to develop adequate plans to meet the ozone air quality standard: (i) will result in the continued violations of the standard, (ii) may result in assumption of air quality programs by EPA at which time the Commonwealth would lose authority over matters affecting its citizens, and (iii) may result in the implementation of sanctions by EPA, such as more restrictive requirements on new major industrial facilities and loss of federal funds for highway construction.

The heart of the plan is the control strategy. The control strategy describes the measures to be used by the state to attain and maintain the air quality standards. There are three basic types of measures: stationary source control measures, mobile source

control measures, and transportation source control measures. Stationary source control measures are directed at emissions primarily from commercial/industrial facilities and operations. Mobile source control measures are directed at tailpipe and other emissions from motor vehicles, and transportation source control measures affect motor vehicle location and use. The Act encourages the use of market-based programs to facilitate the attainment of the milestones and goals in the SIP. One market-based program to assist in meeting these goals is emissions trading.

Emissions trading consists of bubbles, netting, offsetting and emissions reduction credit banking. These steps involve the creation of surplus emissions reduction credits at sources of air pollution for use to meet SIP air pollution control requirements by the same or other sources. The source creating the emission reduction credit could either sell (trade) the credit to another source or store (bank) the credit for later use or sale. Such a program can provide more flexibility to meet environmental requirements, thus reducing costs and encouraging faster compliance. Moreover, the development of generic trading rules enables states to expedite the attainment of SIP goals and eliminates the need for case-by-case review of emission trading projects. New and existing sources can take advantage of emissions trading. In order to obtain an air quality permit in some air quality areas, new industry and existing industry that is significantly expanding or modifying its operations must find credits to offset the amount of new pollution released so there is no net increase in pollution levels in the area.

Properly utilized, emissions trading can provide more flexibility for both new and existing industry to meet environmental requirements, while reducing pollution control costs and encouraging faster compliance with regulatory requirements. Emissions trading can also provide an incentive for industry to install innovative pollution control equipment and increase pollution prevention efforts.

Many areas within the eastern half of the United States petitioned EPA regarding their inability to achieve the ozone standard due to significant amounts of ozone and oxides of nitrogen (NOx), a precursor to ozone, being transported across state boundaries. EPA made a determination (Finding of Significant Contribution and Rulemaking for Certain States in the Ozone Transport Assessment Group Region for Purposes of Reducing Regional Transport of Ozone; 63 FR 57356, October 27, 1998) that sources in 22 states and the District of Columbia emitted NOx in amounts that significantly contribute to nonattainment of the ozone NAAQS in one or more downwind states. EPA also required that each of the affected upwind jurisdictions (sometimes referred to as upwind states) submit SIP revisions prohibiting those amounts of NOx emissions which significantly contribute to downwind air quality problems. Virginia was included as one of the upwind states.

The rulemaking, known as the NOx SIP call rule (40 CFR 51.121), also includes statewide NOx emissions budget levels that each state must achieve by the year 2007. Furthermore, the NOx SIP call rule identifies specific source categories that are covered by the budget. Failure to achieve the budget will result in a Federal Implementation Plan

(FIP) for which EPA has also published a Notice of Proposed Rulemaking (63 FR 56394, October 21, 1998).

The NOx SIP Call final rule identifies 22 jurisdictions as having substantially inadequate SIPs to comply with requirements of the Clean Air Act that address interstate transport of nitrogen oxides in amounts that will contribute significantly to nonattainment in one or more other States with respect to the 1-hour ozone national ambient air quality standards. It mandates that, for each jurisdiction identified, a SIP revision must be submitted to EPA that imposes enforceable mechanisms to assure that, collectively, all sources identified in the budget, will not exceed the NOx emissions projected for the year 2007 ozone season. The SIP revisions must include control measures to limit the amount of NOx so that the jurisdiction's budget is not exceeded. The control measures must be implemented no later that May 1, 2003 (later adjusted by the United States Court of Appeals for the District of Columbia Circuit to May 31, 2004). Emission reductions used to demonstrate compliance with the revision must occur during the ozone season. The revision must include a description of enforcement methods including monitoring compliance with each selected control measure and procedures for handling violations. For large electric generators and industrial boilers, the control measures must include a NOx mass emissions cap on each source, and impose a NOx emission rate so that the State can comply with the 2007 ozone NOx budget.

The NOx SIP call rule permits the states to include an allowance trading program as an option in their SIP revisions. This element is allowed under 40 CFR 51.121(p) and is contained in 40 CFR Part 96 of the NOx SIP Call rule. The allowance trading system is very similar to the emissions trading system described above in this notice except the geographic area is different and the pollutant and sources covered are limited as described in the preceding paragraph. For this reason the allowance trading system is classified as a closed market trading system.

Detail of Changes

Please detail any changes, other than strictly editorial changes, that are being proposed. Please detail new substantive provisions, all substantive changes to existing sections, or both where appropriate. This statement should provide a section-by-section description of changes implemented by the proposed regulatory action. Where applicable, include cross-referenced citations when the proposed regulation is intended to replace an existing regulation.

1. Article 1 establishes the general provisions covering the NO_X budget trading program, specifically: purpose; definitions; measurements, abbreviations, and acronyms; applicability; retired unit exemptions; standard requirements; and computation of time.

2. Article 2 establishes the provisions covering NO_X authorized account representatives for NO_X budget sources, specifically: authorization and responsibilities of the authorized account representatives; alternate authorized account representatives; changing the authorized account representative and the alternate authorized account representative; changes in the owners and operators; account certificate of representation; and objections concerning the authorized account representative.

3. Article 3 establishes the provisions covering NO_X budget permits, specifically: general permit requirements; submission of permit applications; information requirements for the permit applications; permit contents; effective date of initial permits; and permit revisions.

4. Article 4 establishes the provisions covering compliance certification, specifically: compliance certification reports; and action of the board and EPA on compliance certifications.

5. Article 5 establishes the provisions covering NO_X allowance allocations, specifically: state trading program budget; timing requirements for allowance allocations; allowance allocations; and compliance supplement pool.

6. Article 6 establishes the provisions covering the NO_X allowance tracking system, specifically: allowance tracking system accounts; establishment of accounts; responsibilities of authorized account representatives; recordation of allowance allocations; compliance; banking; account error; and closing of general accounts.

7. Article 7 establishes the provisions covering NO_X allowance transfers, specifically: scope and submission of allowance transfers; EPA recordation; and notification.

8. Article 8 establishes the provisions covering monitoring and reporting, specifically: general requirements; initial certification and recertification procedures; out of control periods; notifications; recordkeeping and reporting; petitions; and additional requirements to provide heat input data for allocations purposes.

9. Article 9 establishes the provisions covering individual NO_X unit opt-ins, specifically: applicability; general; authorized account representative; applying for budget opt-in permit; opt-in process; budget opt-in permit contents; withdrawal from NO_X budget trading program; change in regulatory status; and allowance allocations to opt-in units.

10. Article 10 establishes the tons per control period of NO_X allowances and credits for the state trading program budget and compliance pool, specifically: state trading program budget allowances; compliance supplement pool credits; total electric generating unit allowance allocations; total non-electric generating unit allowance allocations; individual electric generating unit allowance allocations; and individual non-electric generating unit allowance allocations.

Alternatives

Please describe the process by which the agency has considered less burdensome and less intrusive alternatives for achieving the need. Also describe, to the extent known, the specific alternatives to the proposal that have been considered to meet the need, and the reasoning by which the agency has rejected any of the alternatives considered.

As provided in the public participation procedures of the State Air Pollution Control Board, the Department included, in the Notice of Intended Regulatory Action, a description of the Department's alternatives and a request for comments on other alternatives and the costs and benefits of the Department's alternatives or any other alternatives that the commenters provided.

Following the above, alternatives to the proposed regulation amendments were considered by the Department. The Department determined that the first alternative is appropriate, as it is the least burdensome and least intrusive alternative that fully meets the purpose of the regulation. The alternatives considered by the Department, along with the reasoning by which the Department has rejected any of the alternatives being considered, are discussed below.

1. Amend the regulations to satisfy the provisions of the law and associated regulations and policies. This option is being selected because it meets the stated purpose of the regulatory action and provides a means to meet the emission caps in a more cost effective manner.

2. Make alternative regulatory changes to those required by the provisions of the law and associated regulations and policies. This option is not being selected because it would not necessarily meet the federal requirements for SIP approval and could result in federal sanctions.

3. Take no action to amend the regulations and continue to permit NOx sources to emit without regard to the federally imposed NOx cap. This option is not being selected because it clearly would result in a SIP disapproval by EPA which would result in a mandatory Federal Implementation Plan.

Public Comment

Please summarize all public comment received during the NOIRA comment period and provide the agency response. If no public comment was received, please include a statement indicating that fact.

1. **SUBJECT:** NOx Allocation Methodology

COMMENTER: William Poleway, General Manager, Mecklenburg Cogeneration Limited Partnership.

TEXT: The prime objective of any program to be developed should be to establish a level playing-field for all generators. In order to accomplish this difficult task, we ask you to carefully consider the allocation of allowances. Any allocation should take into account a broad range of factors as opposed to only historical heat input as in the Federal Implementation Plan. We believe that the Federal Implementation Plan utilizes a "shotgun" approach and may reward some of the largest polluters and penalize some of the cleaner more efficient facilities. As a cogenerator, MCLP would like to specifically

request that special consideration be given to the allocation of allowances to cogeneration facilities. Cogeneration facilities, by providing steam to a host, eliminate most if not all of the emissions that would have been generated by that steam host. The eliminated emissions in many cases contained higher levels of pollutants, since they would have been generated by boilers with less stringent permit requirements. The inherent thermal efficiency of the cogeneration cycle also means that process steam and electricity can be produced using less fuel than if the two energy products were generated in separate processes. In addition, cogeneration facilities provide an economic benefit to the community. Cogenerated steam is provided at a discount, enabling the steam host to lower its costs, thereby helping to ensure its financial viability. Accordingly, we ask the Department to consider the positive effect that cogeneration facilities have had on the environment and the local economy in developing the SIP.

RESPONSE: The allocation methodology in the proposed regulation is based on a system that is fair and equitable for all sources. It was determined after extensive debate and discussion within the ad hoc group, is consistent with the EPA final rule and ensures a consistent approach for determining allocations for all effected sources.

It would be impracticable to craft an allocation methodology for each unit covered by the regulation taking into account all of the possible factors that impact NOx emissions for a particular source or unit. The time necessary to conduct such an involved analysis for each unit would exceed the timeframe required for early allowance notification. Notification as soon as possible is critical for source owners. Sources need sufficient lead-time to order and install control equipment, if necessary, to ensure compliance for the 2004 control period.

2. **SUBJECT:** Selection of the Department Alternatives

COMMENTER: William Poleway, General Manager, Mecklenburg Cogeneration Limited Partnership.

TEXT: We agree with the Department's preferred alternative to amend the regulations to satisfy the provisions of the law and associated regulations and policies. This alternative provides control over the structure of the program while complying with federal regulations. A mandatory Federal Implementation Plan would provide no flexibility and may have negative effects on the deregulated power industry in Virginia.

RESPONSE: The comments are appreciated.

3. **SUBJECT:** Emissions Trading

COMMENTER: William Poleway, General Manager, Mecklenburg Cogeneration Limited Partnership.

TEXT: MCLP believes that any SIP developed should include the provision for trading. Trading provides the affected facilities with more than one option for meeting the requirements of the proposed regulations. The result is that facilities will be able to select the most cost effective option for compliance, thereby minimizing any potential increases in the cost of generation. If a trading program is adopted, we believe that it should incorporate provisions for interstate trading among the 19 states subject to the NOx SIP call.

RESPONSE: The proposed regulation does include provisions for trading that will allow owners of affected units to participate in the NOx Emission Budget Program administered by the Environmental Protection Agency (EPA).

4. **SUBJECT:** Emission Trading

COMMENTER: Pamela F. Faggert, Manager, Environmental Policy and Compliance, Dominion Resources.

TEXT: In the NOIRA, the DEQ solicits comment on whether the proposal should include an allowance trading system. Virginia Power believes that an allowance trading system must be established as part of this regulation. We agree with the DEQ that an emission trading program provides more flexibility in meeting emission reduction requirements and reduces the potential costs of such reduction requirements.

If the State adopts EPA's SIP Call, and imposes an emissions cap, the state should adopt EPA's model NOx trading program which allows trading across the 22-state SIP Call region. The state can use existing provisions of the Clean Air Act to impose specific emission limits at certain facilities or units to address any concerns/problems with local-scale nonattainment/air quality problems.

RESPONSE: See response to comment #3.

5. **SUBJECT:** Emissions Trading

COMMENTER: Jeffery P. Novotny, Environmental Services, American Electric Power.

TEXT: We support the ability to trade for allowances on both an interstate and intrastate basis. A trading program provides industry with additional options to meet the emissions budget while operating within a competitive environment. The electrical industry sources have experience with a market-based trading system. While AEP does not fully endorse an EPA managed trading system, we believe a trading program allows at least one more option to affected sources. Within a market-based trading system, the demand determines the cost of allowances and lets industry make decisions on which option is most economical. The ability to trade should be open to all 50 of the United States as each allowance results in a net reduction of a ton of NOx. The monitoring,

record keeping, auditing and all other functions of a trading system will have to be developed along with adequate funding of the trading program.

RESPONSE: The proposed regulation includes trading provisions that will be administered by EPA much like the acid rain trading provisions included in Title IV of the Clean Air Act. It would be very inefficient and expensive for each and every state covered by the program to administer a separate trading program. In addition, it would be more confusing and time consuming for the sources participating in the program.

The object of the regulation is to reduce the transport of NOx emissions and thereby reduce the formation of ozone. Extensive modeling was conducted by states and EPA during the Ozone Transport and Assessment Group (OTAG) meetings which were held prior to the development of the federal NOx emission trading rule. This modeling demonstrated that the NOx emissions from western states did not contribute to ozone formation in the northeast. In addition, Virginia conducted modeling beyond the OTAG efforts that clearly demonstrated the greatest air quality benefits occur in those areas where the NOx reductions occur and decrease rapidly with distance. Allowing a utility to purchase NOx allowances generated in North Dakota would have very little improvement, i.e. none, on the air quality in Virginia.

All sources participating in the program would have to meet the same monitoring requirement to ensure that NOx tons traded were equal. The cost for monitoring for EGUs and non-EGUs located in the west would far exceed the air quality benefits and therefore, were not included in the program.

6. **SUBJECT:** Applicability Criteria

COMMENTER: Vincent J. Ammirato, PE, Columbia Gas Transmission.

TEXT: Based on the preamble, the objective of the Federal Implementation Plan published in the Federal Register on October 21, 1998 is to control NOx emissions from large non-electric generating units, which are defined as units having NOx emissions greater than 1 ton per day (tpd). For internal combustion (IC) engines, EPA used an "average" NOx emission factor of -16 grams per horsepower-hour (g/hp-hr) based on data in its 1993 Alternate Control Techniques (ACT) document for IC engines (EPA-453/R-93-032). Based on this average emission factor, EPA concluded that 1-tpd equates to an engine rating of 2400 horsepower (hp) for lean burn IC engines and set the applicability level at 2400 hp (rather than 1-tpd). In reality, the NOx emission factors for IC engines vary widely. Columbia operates a number of engines that have emission factors of 3 g/hp-hr or less (one-fifth of EPA's average value). This is especially the case in Virginia where all of Columbia's engines that exceed either 2400 hp or the threshold have already installed emission controls that meet Best Available Control Technology (BACT) requirements. Columbia has installed BACT on all IC engines of this size in Virginia and they are currently permitted and operating at emission rates of 3 g/hp-hr or less.

Furthermore, many engines are operated by the gas transmission industry to meet seasonal gas demands and do not operate 24 hours per day. A review of actual operating data for Columbia's IC engines located in Virginia indicated that these units operated on an average of less then 20 percent of the potential hours during the 1997 and 1998 ozone season.

Because of this wide variability in emission factors and operating hours, Columbia recommends using an emission cutoff of 1-tpd of actual NOx emissions to determine applicability rather than the engine hp rating. Data on engine-specific emission rates and seasonal operating rates are readily available from Title V applications, annual emission inventories and other publicly available sources. Use of hp cutoff will add additional requirements to well-controlled engines that already have installed low emission controls to achieve less than 3 g/hp-hr. As a result, only small emission reductions will be achieved from such engines at a significantly higher cost than the $2,000/ton cost cited in the preamble of the proposed EPA SIP Call.

RESPONSE: No internal combustion engines are subject to the regulation.

7. **SUBJECT:** Regulatory Compliance

COMMENTER: Vincent J. Ammirato, PE, Columbia Gas Transmission.

TEXT: Many natural gas compressor stations contain multiple engines. In addition, an individual company may operate multiple compressor stations in the same state along the pipeline. Engines used for compressor drives consist of many different makes, models, types and vintages, making the degree of emission reduction varying from engine to engine. Depending on the specific engine it may be more cost effective to modify the combustion process (e.g., improving air/fuel mixing with higher-pressure fuel injectors) on a larger populations of engines to achieve 50% emission reduction than 90% reduction on one engine with the overall amount of emission reductions being same for each case.

Columbia requests that the final SIP not be limited to achieving required emission reductions only from the units above the size cutoff, but to achieve an equivalent emission reduction by allowing the owner/operator to determine how to most cost-effectively achieve the required reductions. An Equivalent Emission Reduction Plan would be submitted by the owner/operator that would define the specific engines and level of emission reduction and would demonstrate that the amount of reduction meets or exceeds the emission reduction goals within the State. Compliance with this option should be readily verifiable based on monitoring provisions in the SIP.

RESPONSE: See response to comment #6.

8. **SUBJECT:** Monitoring Requirements

COMMENTER: Vincent J. Ammirato, PE, Columbia Gas Transmission.

TEXT: IC engines are not included in the emission-trading program and are considered small emission sources. Monitoring requirements should be appropriate to this source category. Columbia's engines currently demonstrate compliance through the use of periodic emission testing, record keeping and agency reports. Certified EPA emission tests are conducted during which engine operating parameters are recorded and related to emission rates. A test protocol and compliance demonstration plan can be submitted to the State agency prior to testing for approval. Normal operating parameters that are measured are fuel flow, engine load and operating hours. Record keeping of the selected operating parameters during the ozone season will be included as part of the annual emission inventory. Records will be maintained for a five-year period, consistent with the Title V Operating Permit or other permit requirements. Columbia request that the final SIP include the same monitoring and record keeping methodology as is in the Title V Operating Permit Program.

RESPONSE: The above referenced sources are not required to participate in the program as defined in the regulation. However, if such sources wanted to participate in the generating and selling of NOx allowances the source would need to follow the monitoring requirements as set out in the regulation. This requirement is included so that allowances that are traded from one source to another are equivalent and have been monitored in the same manner.

9. **SUBJECT:** Timeframe of NOx Allocation

COMMENTER: Jeffery P. Novotny, Environmental Services, American Electric Power.

TEXT: The allocation of allowances from the emissions budget within the SIP must provide for operational stability and long term planning and budgeting. With this in mind, we recommend that the term for allocations be at least 10 years. A basis for the allocations will be defined in the regulation.

RESPONSE: The proposed regulation provides for a 10-year window for initial NOx allowance allocations.

10. **SUBJECT:** NOx Statewide Budget

COMMENTER: Jeffery P. Novotny, Environmental Services, American Electric Power.

TEXT: We applaud the State for the efforts taken to develop an accurate NOx emissions inventory for the state budget. We recommend that the revised inventory be included into the SIP revision

RESPONSE: The statewide budget for EGUs identified in the proposed regulation is 26.96 percent larger than the budget proposed by the EPA. The numbers for this

budget represent a more accurate inventory than the EPA inventory The department has attempted to work with EPA to correct the problems with the EPA inventory for several years, so far to no avail. It is the Department's position that the proposed budget more accurately reflects the actual emissions generated in Virginia during the years designated for the inventory development. It should be noted that the actual inventory numbers are submitted with the SIP and are not included in the proposed regulation. The allocations indicated in the proposed regulation are for a control period, May 1 through September 31, not an entire year.

11. **SUBJECT:** NOx Statewide Budget

COMMENTER: Pamela F. Faggert, Manager, Environmental Policy and Compliance, Dominion Resources.

TEXT: We believe it is important that the language of the regulation's purpose be expanded to include NOx budgets (implemented by a state SIP revision) that may differ from the exact budget calculated by EPA and established in the May 14, 1999 Technical Amendment. Virginia Power believes that, should the state decide to implement the NOx SIP Call as proposed/envisioned by EPA, that it has the authority to correct the baseline emission inventories and subsequent 2007 emissions budget if EPA's final inventory and NOx budget contains deficiencies, if the state can justify such corrections. In fact, Virginia Power strongly urges the DEQ to include such corrections in its SIP revision.

RESPONSE: See response to comment #10.

12. **SUBJECT:** Emission Offsets

COMMENTER: Jeffery P. Novotny, Environmental Services, American Electric Power.

TEXT: Emission offsets for new sources are recommended to be at a ratio of one to one. This ratio is consistent with a "no net increase" of pollutants while maintaining the environment at or below existing air quality conditions yet allows continued economical and industrial growth.

RESPONSE: In the Notice of Intended Regulatory Action, the Department states that it intends to modify Article 9 of 9 VAC 5 Chapter 80 to implement the requirements of 40 CFR 51.121 (f)(2)(i) and any other pertinent federal regulations. The purpose of the proposed action was to address one element of the SIP revision: "to impose enforceable mechanisms to assure that collectively all the covered sources, including new and modified, will not exceed the total budget established for the specific source categories for the Commonwealth for the year 2007 ozone season." This was to be accomplished by modifying Article 9 of 9 VAC 5 Chapter 80 which addresses the need for offsets prior to locating new major stationary sources and expansions to existing sources in nonattainment areas (commonly called nonattainment NSR).

The original intent to modify the nonattainment NSR regulation was abandoned in favor of developing an NOx budget trading program, as allowed under the NOx SIP Call rule. This change of direction was based on other comments received (see comments 3 and 4) during the comment period and decisions made during the collaborative process. As a result, the issue of offsets became irrelevant since a budget trading program is based on a system of trading allowances not offsets.

13. **SUBJECT:** Emission Offsets

COMMENTER: Pamela F. Faggert, Manager, Environmental Policy and Compliance, Dominion Resources.

TEXT: The NOIRA states that the primary purpose of the proposed action is to address the element of Virginia's SIP revision, required under EPA's NOx SIP Call rule, that would impose enforceable mechanisms to assure that collectively all sources subject to the SIP Call, including new and modified sources, will not exceed the total budget established for the source categories by EPA for the Commonwealth for the 2007 ozone season. The DEQ further states that the proposed regulation is to amend the existing regulation of the board which requires emission offsets for new and modified sources locating in nonattainment areas by expanding the geographic coverage of offset requirements to statewide, but limiting the statewide requirements for emission offsets strictly to NOx emissions.

Virginia Power agrees in concept that the current regulations will need to be amended to extend the geographic scope of the emission offset requirements since such offsets presumably may be required in the future to ensure compliance with the NOx budget or emission cap, whether imposed by a state regulation or a Federal Implementation Plan (FIP). We also agree that the expanded geographic coverage of emission offset requirements need only apply to NOx. However, we emphasize that this amendment will be necessary only if Virginia submits a SIP that involves the establishment of a statewide NOx emissions cap, whether such a cap is the specific budget established in EPA's May 14, 1999 Technical Amendment to the NOx SIP Call (EPA's revised NOx SIP Call budget), some variation of the budget calculated by EPA or a FIP. The regulation should contain language that would render these amendments effective only upon the implementation of a statewide NOx emissions cap either by a state SIP revision or a FIP.

The amended regulations requiring emission offsets pertaining to meeting the requirements of the statewide NOx emissions caps should not exceed a ratio of 1:1.

RESPONSE: The proposed regulation does contain a statewide budget for NOx allowances during the control period and incorporates a method for trading and banking those allowances. As a result of the trading mechanism in the proposed regulation, the issue of offsets is irrelevant.

14. **SUBJECT:** Early Reduction Credits (ERCs)

COMMENTER: Jeffery P. Novotny, Environmental Services, American Electric Power.

TEXT: The regulation should provide credits for NOx reductions made after the final date of the baseline inventory (December 31, 1996). Any NOx reductions that are not specifically required as part of this or another NOx regulation should be available for banking or trade.

RESPONSE: The proposed regulation does provide for early reduction credits provided that specific criteria are met. The credits cannot be generated until such time as the regulation becomes effective.

15. **SUBJECT:** Regulation “Escape Clause”

COMMENTER: Pamela F. Faggert, Manager, Environmental Policy and Compliance, Dominion Resources.

TEXT: The regulation should include an "escape clause" that nullifies the regulation if, once adopted, it is no longer necessary in the event that current litigation of EPA's NOx SIP Call (to which the Commonwealth of Virginia is a party) is successful.

RESPONSE: Such a clause has been suggested for past regulatory actions. The Office of the Attorney General for the Commonwealth of Virginia has determined that such language is very difficult to draft in any manner that is legal and meaningful and should not be included in any legally enforceable documents.

16. **SUBJECT:** Formation of an Ad Hoc Group

COMMENTER: Pamela F. Faggert, Manager, Environmental Policy and Compliance, Dominion Resources.

TEXT: At this time, Virginia Power is not recommending that the state adopt the program described either in Part 96 or Part 97 by mere reference. We believe that the ad-hoc committee should address and consider the options and variations allowed in EPA's NOx model trading rule in developing the state trading program to build as much flexibility into the program as possible.

Specific elements and issues we believe the ad-hoc committee should address include:

- Allocation methodology for participating sources
    - Lifetime of allocations
    - Multi-year or single year baseline
    - Treatment/inclusion of new sources/modified sources
    - Common or separate budgets (egu vs. non-egu)

- Opt-in provisions and monitoring requirements
- Exemption provisions
- Banking provisions/ withdrawals
- Supplementary Compliance Pool
    - Early reduction credits (ERC's) vs. direct distribution
    - Method of distributing Compliance Pool allowances
    - ERC provisions/requirements
- Provisions to revisit program elements on a periodic or as needed basis.

RESPONSE: An ad hoc group was formed to assist in the development of this regulation. All of the issues mentioned above were addressed by the group during the development of the proposed regulation. As a result of the group's work many areas of the Virginia proposed rule are different that either 40 CFR Part 96 or 40 CFR Part 97 of the federal regulations. These areas include: compliance date, NOx allowance allocation methodology for electrical generating units (EGUs) and non-EGUs, statewide NOx budget, set-a sides for new sources, NOx allowance compliance supplement pool. The trading and banking aspects of the proposed regulation do mirror the EPA requirements, as the EPA will administer that element of the program.

Clarity of the Regulation

Please provide a statement indicating that the agency, through examination of the regulation and relevant public comments, has determined that the regulation is clearly written and easily understandable by the individuals and entities affected.

The Department, through examination of the regulation and relevant public comments, has determined that the regulation is clearly written and easily understandable by the individuals and entities affected.

Periodic Review

Please supply a schedule setting forth when the agency will initiate a review and re-evaluation to determine if the regulation should be continued, amended, or terminated. The specific and measurable regulatory goals should be outlined with this schedule. The review shall take place no later than three years after the proposed regulation is expected to be effective.

The Department will initiate a review and re-evaluation of the regulation to determine if it should be continued, amended, or terminated within three years after its effective date.

The specific and measurable goals the proposed regulation amendments are intended to achieve are as follows:

1. To protect public health and welfare with the least possible cost and intrusiveness to the citizens and businesses of the Commonwealth.

2. To assure that all affected sources will not collectively exceed the total NOx emissions cap established by regulation for the year 2007 ozone season and to foster a program under which the creation, trading (buying and selling) and registering of emission credits can occur.

3. To prohibit emissions which would contribute to nonattainment of the national air quality standards or interfere with maintenance of the standard.

Family Impact Statement

Please provide an analysis of the proposed regulatory action that assesses the potential impact on the institution of the family and family stability including the extent to which the regulatory action will: 1) strengthen or erode the authority and rights of parents in the education, nurturing, and supervision of their children; 2) encourage or discourage economic self-sufficiency, self-pride, and the assumption of responsibility for oneself, one's spouse, and one's children and/or elderly parents; 3) strengthen or erode the marital commitment; and 4) increase or decrease disposable family income.

It is not anticipated that these regulation amendments will have a direct impact on families. However, there will be positive indirect impacts in that the regulation amendments will ensure that the Commonwealth's air pollution control regulations will function as effectively as possible, thus contributing to reductions in related health problems.

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